DATA SHEET

3Com® Switch 7700 Family

Key Benefits

Scalability
Scales to 288 Fast Ethernet and 120 Gigabit Ethernet ports, with support Choose from 8-slot redundant, 7-slot, and 4-slot chassis configurations.

Performance
Provides up to 240 Gbps switching performance with local switching on each blade. Helps reduce congestion in the core of the network, improving application response times when accessing data across the network.

Prioritize Converged and other Business-Critical Traffic
Advanced policy-based Class of Service/Quality of Service (CoS/QoS), eight priority queues, committed access rates, and bandwidth limiting and filtering enables identification and prioritization of business-critical traffic, such as voice, for optimal network performance. Routing of multicast traffic in hardware on the Switch 7700 helps enable maximum performance for streamed voice and video data.

Network Level Availability
Helps minimize network down-time, providing a robust platform capable of supporting VoIP traffic. Enable rapid disaster recovery with resilient links, link aggregation, Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Open Shortest Path First (OSPF), and Virtual Router Redundancy Protocol (VRRP). Redundant chassis architecture supports power supplies, fans and hot-swappable switching modules for virtually non-stop operation, while sub-one-second fabric failover on the 3Com Switch 7700R helps enable the highest level of network availability.

Security
IEEE 802.1X RADIUS Network Login and Access Control Lists provide secure network access control at the core of the network. Layer 3 protocols and management can be authenticated, preventing unauthorized configuration of the network.

Network Control
All 3Com Switch 7700 modules support hardware-based packet filters, Virtual LANs (VLANs) and RMON support for greater network control.

Advanced Layer 3 Support
Provides multiprotocol routing support of IP and multicast traffic control through IGMP and PIM SM/DM routing, for logical network segmentation and secure communication. Capabilities for MAN deployments and larger networks are provided through the support for BGP* and IS-IS*.

Flexibility
Modular design of the Switch 7700 enables additional modules to be inserted as, and when, the network grows. Provides a range of port densities and media types for connections of 10 to 1000 Mbps, with fiber or copper cabling requirements.

* Available in the 3Com Advanced Feature Software

The 3Com® Switch 7700 modular LAN switch family delivers high-performance, multilayer, Gigabit and Fast Ethernet switching and routing in a scalable, flexible, modular chassis. Three chassis configurations are offered:

- High-availability 8-slot redundant chassis, with six payload slots, primary switch fabric, and optional backup switch fabric.
- 7-slot, with six payload slots plus switch fabric.
- 4-slot, with three payload slots, switch fabric, and optional plug-in submodule supporting four additional Gigabit ports.

The resilient systems architecture helps provide business network continuity for data and voice convergence applications—required in demanding core and campus environments.

The 3Com Switch 7700 is ideal for campus and building-level switching in the core, with support for up to 120 Gigabit ports and an architecture ready for future 10-Gigabit module support. The availability of high-density 10/100 ports for a Switch 7700 configuration makes it appropriate for wiring closet workgroup aggregation.

The Switch 7700R 8-Slot chassis is designed for networking environments demanding the highest level of resiliency. When configured with an optional spare switch fabric, the Switch 7700R boasts sub-one-second switch fabric failover should there be a primary fabric failure, helping ensure continuous network operation.

Fault-tolerant aggregation features in the Switch 7700 family include Virtual Router Redundancy Protocol (VRRP), Rapid Spanning Tree Protocol (RSTP), Spanning Tree Protocol (STP), Multiple Spanning Tree Protocol* (MSTP), and link aggregation for virtually non-stop network availability. The architecture of the Switch 7700 supports a passive backplane and N+1 redundant power supplies for seamless network operation.

The Switch 7700 family supports IP (RIP, OSPF) and IGMP PIM (DM and SM) multicast routing for logical network segmentation and traffic control. Advanced QoS features provide differentiated network services for traffic classification and prioritization based on Diffserv Code point, Type of Service (ToS), and IEEE 802.1p Class of Service (CoS).

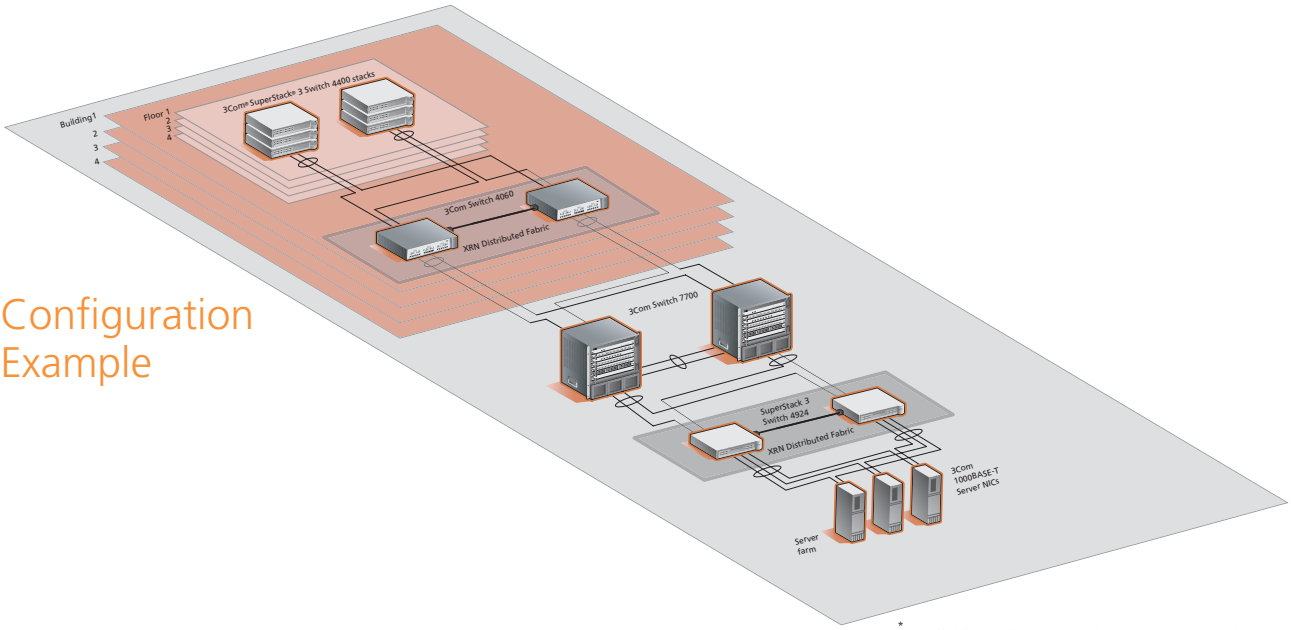
Advanced Bandwidth management allows different traffic flows to be shaped using packet priority, minimum and maximum bandwidth thresholds, and individual flow weightings.

These features enable optimal priority queuing of network data, helping to ensure minimal congestion for important traffic. Routing in hardware of multicast traffic for voice and video streaming enables minimal latencies through the switch.

The network can be secured from unauthorized access through 802.1X RADIUS Network Login, Access Control Lists and management authentication. The chassis supports most cabling requirements and offers comprehensive management for simple configuration and advanced network monitoring and troubleshooting.

The switch fabric of the 7700 4-Slot chassis supports sub-modules for additional gigabit (1000BASE-T or 1000BASE-X GBIC ports) connections. This is particularly helpful when Gigabit ports are required for an uplink, and the payload slots contain Fast Ethernet modules.

Configuration Example



* Available in the 3Com Advanced Feature Software

Features

Performance	Backplane capacity: 96 Gbps (4-slot model: 48 Gbps) Maximum bandwidth: 240 Gbps (4-slot model: 120 Gbps) Maximum throughput: 177 Mpps (4-slot model: 88 Mpps)
Layer 2 Switching	
MAC Address	32K MAC addresses 10K Static MAC addresses Modules forwarding (delay <10µs) 9K Jumbo Frame support
VLAN	4096 VLANs (IEEE 802.1Q) GVRP (GARP VLAN Registration Protocol)
Link Aggregation	Supports maximum of 64 link aggregation groups
Auto-negotiation	Auto-negotiation of port speed and duplex
Traffic control	IEEE 802.3x full-duplex flow control Back pressure flow control for half-duplex Supports broadcast storm suppression per VLAN
STP/RSTP	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1S Multiple Spanning Tree Protocol instances (MSTP)* Single STP instance BPDU (Bridge Protocol Data Unit) protection
Layer 3 Switching	
Routes	Hardware based routing 64K routes 64K static routes 64K dynamic / static ARP (Address Resolution Protocol) entries
IP Routing	64 IP interfaces RIP (Routing Information Protocol), v1 and v2; supports Split Horizons OSPF (Open Shortest Path First), v1 and v2; 50 areas BGP4 (Boarder Gateway Protocol)* IS-IS (Intra-Domain Intermediate System to Intermediate System)*
Multicast	Hardware-based multicast routing for wirespeed performance 1K multicast routes IGMP (Internet Group Management Protocol) snooping on Layer 2 interfaces IGMP v1 and v2 GMRP (GARP Multicast Registration Protocol) PIM-DM (Protocol Independent Multicast-Dense Mode) PIM-SM (Protocol Independent Multicast-Sparse Mode)
Network protocol	DHCP Relay (Dynamic Host Configuration Protocol Relay) TCP/IP protocol stack ARP
Resilience	VRRP (Virtual Router Redundancy Protocol): 14 virtual routers per switch; each virtual router supports 16 IP addresses
Convergence	
Priority Queues	Eight hardware queues per port
Traffic Prioritization	Flow-based QoS profiles Ingress and egress Remarking of packets based on priority: • Auto classification of NBX telephones • Selectable prioritization • DSCP (Diffserv Code Point) • Type of Service (ToS) • IEEE 802.1p Class of Service (CoS) • IP precedence • Local precedence: physical port, source/destination MAC address, VLAN information, Ethernet type, Layer 3 protocol, source/destination IP address, DSCP, datagram type, IP Layer 4 protocol, IP Layer 4 ports

* Available in the 3Com Advanced Feature Software

Features, continued

Bandwidth Management	Flow based bandwidth management Flows identified through Access Control Lists (ACLs) Minimum and maximum thresholds: • 64kbit/s increments • 128 traffic classes per port • 512 flows per class
Queue Handling	Random Early Detect/Discard (RED) Queuing algorithms Strict Priority Queuing WRR (Weighted Round Robin) provided through bandwidth management
Security	
Network Login	IEEE 802.1X user authentication Local authentication and RADIUS authentication.
Packet Filtering	Wirespeed packet filtering in hardware Supports a maximum of 1,536 ACL rules ACLs filter at Layers 2, 3, and 4: physical port, source/destination MAC address, VLAN information, Ethernet type, Layer 3 protocol, source/destination IP address, DSCP, datagram type, IP Layer 4 protocol, IP Layer 4 ports
Switch Protocol Security	MD5 cipher-text authentication and clear-text authentication for OSPF v2 and RIP v2 packets
Switch Management	IEEE 802.1X user authentication on switch Telnet sessions Hierarchical management and password protection for management interface
Management	
System Configuration and Management	CLI (Command Line Interface) configuration mode Configuration via the console (control console) port Local/remote configuration via Telnet Remote configuration via modem dial-up System configuration with SNMP v1, 2, and 3* Comprehensive statistics RMON (Remote Monitoring) groups statistics, history, alarm, and events ACL/QoS statistics IP interface statistics System log Syslog
System maintenance	Detailed alarm/debug information Hierarchical alarms Alarm generation Alarm filtering Statistics Supports Ping and Traceroute Configuration file for backup and restore
System file transfer mechanisms	Xmodem FTP (File Transfer Protocol) TFTP (Trivial File Transfer Protocol)
Graphical management	3Com Network Administrator for HP OpenView (Windows): • HP OpenView integration of icons, MIBs, traps • Import of discovered switches from HP OpenView • Switch Manager application for configuration and monitoring; import/export performance and systems statistics • CLI access

* Available in the 3Com Advanced Feature Software

Specifications

All information in this section is relevant to all members of the 3Com Switch 7700 family, unless stated otherwise.

Capacities and Performance

Switch 7700 4-slot:
One switch fabric, three optional payload slots

Backplane: 48 Gbps, max
Bandwidth: 120 Gbps, max
Throughput: 88 Mpps, max

Switch 7700 7-slot:
One switch fabric, six optional payload slots

Backplane: 96 Gbps, max
Bandwidth: 240 Gbps, max
Throughput: 177 Mpps, max

Switch 7700R 8-slot:
One switch fabric, one optional redundant fabric, six optional payload slots

Backplane: 96 Gbps, max
Bandwidth: 240 Gbps, max
Throughput: 177 Mpps, max

All models:
Layer 3: 64 interfaces, IP routing at 48 Mpps, 64k IP routing entries

Connectivity:
Mix and match in available payload slots:

48-port 10BASE-T/100BASE-TX

8-port 10/100/1000BASE-T

20-port 10/100/1000BASE-T

8-port 1000BASE-X (GBIC)

20-port 1000BASE-X (SFP)

24-port 100BASE-FX (multi-mode fiber)

4-port 1000BASE-T†

4-port 1000BASE-X (SFP) †

Dimensions

Switch 7700 4-slot:
Height:35.2 cm (13.8 in)
Width: 43.6 cm (17.2 in)
Depth: 48.0 cm (18.9 in)
Weight (fully loaded chassis): <46 kg (102 lbs)

Switch 7700 7-slot:
Height:48.6 cm (19.1 in)
Width: 43.6 cm (17.2 in)
Depth: 48.0 cm (18.9 in)
Weight (fully loaded chassis): <70 kg (154 lbs)

Switch 7700R 8-slot:
Height:51.9 cm (20.4 in)
Width: 43.6 cm (17.2 in)
Depth: 48.0 cm (18.9 in)
Weight (fully loaded chassis): <70 kg (154 lbs)

Power Supply
550 W AC Power Supply

Input voltage: 100-240 VAC autoranging

Operating frequency: 47-63 Hz

Maximum current: 15A at 110 VAC; 7A at 200 VAC

Maximum output power: 460 W

Environmental Requirements
Operating temperature:
0° to 40°C (32° to 104°F)

Operating humidity:
5% to 85% non-condensing

Storage temperature:
-40° to 70°C (-40° to 158°F)

Storage humidity:
10% to 90% non-condensing

MTBF
Switch 7700 Gigabit Ethernet Switch Fabric (3C16857):
63 years (552,000 hours)

Switch 7700 1000BASE-X Module (8-port 3C16858):
66 years (583,000 hours)

Switch 7700 10/100/1000BASE-T Module (8-port 3C16859):
66 years (583,000 hours)

Switch 7700 10/100BASE-TX Module (3C16860):
38 years (336,000 hours)

Switch 7700 100BASE-FX Module (3C16861):
63 years (552,000 hours)

Switch 7700 1000BASE-X Module (20-port 3C16862):
63 years (552,000 hours)

Switch 7700 10/100/1000BASE-T Module (20-port 3C16863):
38 years (336,000 hours)

Security
RADIUS IEEE 802.1X

Access Control Lists (ACL)

Packet filtering

SNMPv3 with Encryption*

Industry Standards Supported

Ethernet Protocols
IEEE 802.1D (STP)

IEEE 802.1p (CoS)

IEEE 802.1Q (VLANs)

IEEE 802.1S (MSTP)*

IEEE 802.1w (RSTP)

IEEE 802.1X (Security)

IEEE 802.3ae (10G Ethernet)

IEEE 802.3i (10BASE-T)

IEEE 802.3u (Fast Ethernet)

IEEE 802.3x (Flow Control)

IEEE 802.3z (Gigabit Ethernet)

Administration Protocols
RFC 1812 (IPv4)

RFC 1518, 1519 (CIDR)

RFC 826 (ARP)

RFC 959 (FTP)

RFC 783 (TFTP)

RFC 768 (UDP)

RFC 791 (IP)

RFC 792 (ICMP)

RFC 793 (TCP)

RFC 2622 (Routing policy)

RFC 951, 1542 (BOOTP)

RFC 2474 (Diffserv)

RFC 2131 (DHCP)

RFC 2132 (DHCP and BOOTP Extension)

RFC 1058 (RIPv1)

RFC1723 (RIPv2)

RFC 2328 (OSPF v2)

RFC 2370 (OSPF Opaque LSA Option)

RFC 1587 (OSPF NSSA option)

RFC 1765 (OSPF Database Overflow)

RFC 2338 (VRRP)

RFC 2362 (PIM-SM)

RFC 1112 (IGMPv1)

RFC 2236 (IGMPv2)

RFC 2138 (Radius Authentication)

RFC 2139 (Radius Accounting)

RFC 2267 (Network Ingress Filtering)

Management, including MIBs Supported
RFC 1493 (Bridge MIB)

RFC 2674 (VLAN MIB Extension)

RFC 1573 (Private IF MIB)

RFC 1213 (MIB II)

RFC 1724 (RIP Version 2 MIB Extension)

RFC 1850 (OSPF Version 2 MIB Extension)

RFC 2787 (VRRP MIB)

RFC 2618 (RADIUS Authentication Client MIB)

RFC 2620 (RADIUS Accounting Client MIB)

RFC 1155 (Structure and Mgmt Information (SMIv1))

RFC 1157 (SNMPv1/v2c)

RFC 1213, 1573 (MIB II)

RFC 1901-1907 (SNMPv2c, SMIv2 and Revised MIB-II)

RFC 2271 (FrameWork)

RFC 2571-2575 (SNMPv3)*

RFC 2578-2580 (SMIv2)

RFC 2819 (RMON)

RFC 2668 (IEEE 802.3 MAU MIB)

RFC 2665 (Pause control)

RFC 2233 (Interfaces MIB)

Emissions / Agency Approvals
CISPR 22 Class A

FCC Part 15 Class A

EN 55022 Class A

ICES -003 Class A

VCCI Class A

Korean Class A

CNS 13438 Class A

AS/NZS 3548 Class A

EN 61000-3-2

EN 61000-3-3

Immunity
Product conforms to:

EN 55024: 1998

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

EN 61000-4-5

EN 61000-4-6

EN 61000-4-11

EN 61000-4-11

Safety Agency Certifications
UL 60950 3rd ed.

IEC 60950: 1999, corr. Feb. 2000; all national deviations

EN 60950: 2000, ZB and ZC deviations

CSA 22.2 No. 950 3rd ed., 1995

NOM-019 SCFI, Mexico; AS/NZS 60950:2000, Australia; Russian GOST safety approval

Management
SNMP and Telnet support

Multiple agents with single management entry point

RMON-1, SMON

RMON Groups: Statistics, History, Alarms and Events

Statistics gathering and reporting

Interfaces: 10BASE-T (RJ-45) Ethernet, RS-232 control port

GUI management with 3Com Network Administrator for HP OpenView

Features of Advanced Feature Software
SNMP v3 (Security, encryption)

BGP4 (WAN routing protocol)

IS-IS (Large-scale WAN routing protocol)

MSTP (Multiple Spanning Tree Protocol)

Warranty
Limited Hardware Warranty for one year. Limited Software Warranty for ninety (90) days. See www.3com.com/warranty for details.

† For use only in Switch 7700 4-Slot Switch Fabric
* Available in the 3Com Advanced Feature Software

Ordering Information

Starter Kits	
3Com Switch 7700 4-Slot Starter Kit *(consisting of chassis, one power supply, fan assembly, and switch fabric)*	3C16870
3Com Switch 7700 7-Slot Starter Kit *(consisting of chassis, two power supplies, fan assembly, and switch fabric)*	3C16850
3Com Switch 7700R 8-Slot Starter Kit *(consisting of chassis, two power supplies, fan assembly, and one switch fabric)*	3C16852
Modules	
3Com Switch 7700 8-port 1000BASE-X (GBICs required, sold separately)	3C16858
3Com Switch 7700 8-port 10/100/1000BASE-T (RJ-45 connectors)	3C16859
3Com Switch 7700 48-port 10/100BASE-TX (RJ-45 connectors)	3C16860
3Com Switch 7700 24-port 100BASE-FX (MT-RJ connectors)	3C16861
3Com Switch 7700 20-port 1000BASE-X (SFPs required, sold separately)	3C16862
3Com Switch 7700 20-port 10/100/1000BASE-T (RJ-45 connectors)	3C16863
3Com Switch 7700 4-port 10/100/1000BASE-T Fabric Sub-module (RJ-45 connectors)[‡]	3C16873
3Com Switch 7700 4-port 1000BASE-X Fabric Sub-module (GBICs required, sold separately)[‡]	3C16874
Software	
3Com Switch 7700 4-Slot Advanced Feature Software	3CR1686591S
3Com Switch 7700 7-Slot Advanced Feature Software	3CR1686593
3Com Switch 7700R 8-Slot Advanced Feature Software	3CR1686593R
GBICs	
3Com 1000BASE-SX GBIC	3CGBIC91
3Com 1000BASE-LX GBIC	3CGBIC92
3Com 1000BASE-T GBIC	3CGBIC93A
3Com 1000BASE-LH70 (70km) GBIC	3CGBIC97
SFPs	
3Com 1000BASE-SX SFP	3CSFP91
3Com 1000BASE-LX SFP	3CSFP92
3Com 1000BASE-T SFP	3CSFP93
3Com 1000BASE-LH70 (70km) SFP	3CSFP97
Spare Components	
3Com Switch 7700 Family AC Power Supply	3C16854
3Com Switch 7700 4-Slot Fan Assembly	3C16871
3Com Switch 7700 7-Slot Fan Assembly	3C16856
3Com Switch 7700R 8-Slot Fan Assembly	3C16855
3Com Switch 7700 4-Slot Switch Fabric	3C16872
3Com Switch 7700 7-Slot Switch Fabric	3C16857
3Com Switch 7700R 8-Slot Redundant Switch Fabric	3C16857R

[‡] For use only in Switch 7700 4-Slot Switch Fabric

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